

DESCRIPTIONS OF SEVERAL SPECIES OF TRICHOPTERA.

By OLIVER S. FLINT, JR., Ithaca, N. Y.¹

Examination of several collections of caddis flies has yielded two new species from the eastern states, plus additional material of a western species. I wish to express my appreciation to Dr. J. G. Franclemont for making his extensive collections available, to Dr. D. G. Denning and Dr. H. H. Ross for examining material, and to the Grace Griswold Fund for assuming the expense of engraving the plate.

Rhyacophila shenandoahensis, n. sp.

The species is a member of the *invaria* group, very closely related to *banksi* and *parantra*. It differs in the male in the apical process of the ninth tergite which is cleft nearly to the base and in the dorsal aspect of the anal sclerite.

Male: Length of fore wing 7–8 mm. Color deep brown in alcoholic material, nearly black when alive.

Genitalia as in Fig. 1. Ninth segment annular, slightly narrowed ventrally, with the dorso-medial process divided nearly to base. Tenth tergite low with small dorsal lobes and blunt posterior point. Anal sclerite dorsally with prominent lateral angles. Claspers with short quadrate basal segment; apical segment deeply divided, dorsal lobe about half length of ventral. Aedeagus identical to related species.

Female: Color and size similar to male. Eighth segment with ventral tongue divided about third its length; lateral margin with sharp tooth; dorsal margin shallowly emarginate.

Holotype male and *allotype* female, White Oak Canyon Trail, Shenandoah National Park, Virginia, June 21, 1955, O. S. Flint, Jr.: deposited in U. S. National Museum. *Paratopotypes*, 5 males: deposited in collections of Illinois Natural History Survey, Cornell University, and author.

Figures of the dorsal aspect of the anal sclerite of *parantra* (Fig. 2) and *banksi* (Fig. 3) are added to facilitate comparison. The specimens were collected along a small stream near its source in several springs near the Skyline Drive.

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Lepidostoma carrolli, n. sp.

This species belongs to the *unicolor* group, closest to *knulli* and *strophis*, but can be separated by the genitalia of the male, in particular the tenth tergite which is widely separated on the meson, and the claspers.

Male: Length of fore wing 5–6 mm. Color of alcoholic specimens light brown. Maxillary palpi apparently one-segmented, nearly round and rugose. Legs, antennae, and wings without sexual modifications.

Genitalia as in Fig. 4. Ninth segment annular, rather short, with small sparse setal patches dorsally. Tenth tergites triangular in lateral view with several small teeth ventrally; dorsally narrow, and widely separated on meson by membranous flap. Claspers short with tip bifid and angled mesad; basal process narrow, subequal in length to claspers; dorsal process arising near base of basal process, with several small teeth internally near apex.

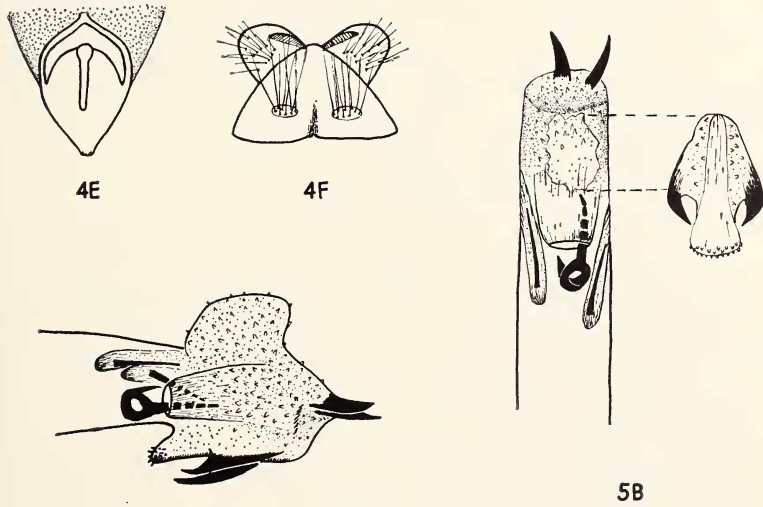
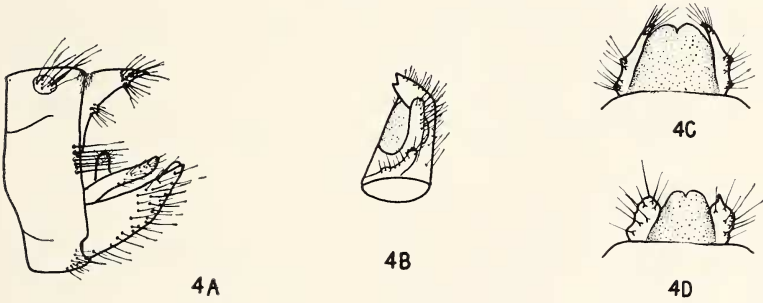
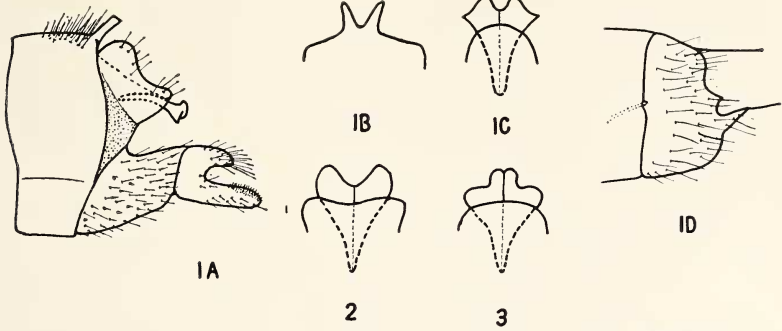
Female: Similar in size and color to male. Ninth tergite produced posteriorly into a blunt angle, and bearing a pair of small setal warts. Tenth tergites extending outwardly as a pair of rounded flaps, each with a narrow posterior ridge. Spermatheca with ventral bridge basal, rounding evenly to sides of spermatheca.

Holotype male, Lakehurst, New Jersey, September 4, 1956, C. B. Knowlton, Jr., and J. G. Franclemont; *allotopotype* female, September 1, 1956; deposited in Cornell University collection.

Paratopotypes: Aug. 25, 1 male; Aug. 26, 4 males; Aug. 30, 1 male, 1 female; Sept. 1, 1 male; deposited in collections of U. S. National Museum, Illinois Natural History Survey, Dr. D. G. Denning, and author.

EXPLANATION OF PLATE

Fig. 1. *Rhyacophila shenandoahensis*: A. Male genitalia, lateral. B. Male, ninth tergite, dorsal. C. Male, anal sclerite, dorsal. D. Female, eighth segment, lateral. Fig. 2. *Rhyacophila parantra*, anal sclerite, dorsal. Fig. 3. *Rhyacophila banksi*, anal sclerite, dorsal. Fig. 4. *Lepidostoma carrolli*: A. Male genitalia, lateral. B. Male, clasper, dorsal. C. Male, tenth tergite, dorsal of holotype. D. Same of paratype. E. Female, spermatheca, ventral. F. Female, ninth and tenth tergites, dorsal. Fig. 5. *Chimarra elia*: A. Male, apex of aedeagus, lateral. B. Same, ventral, with ventral process moved to side.



There is variation in the shape of the tenth tergites between a pointed type (Fig. 4C) and a rounded type (Fig. 4D), one specimen even having one side rounded, the other side pointed. One male paratype has the claspers bent sharply mesad near the middle. The series was collected at a light overlooking an abandoned cranberry bog and stream on Wranglebrook Rd., about three miles from Lakehurst.

I take great pleasure in naming the species for its co-collector, Mr. Carroll B. Knowlton, Jr.

Chimarra elia Ross

This species was described in 1944 by Dr. Ross from a male collected in Brackettville, Texas. In 1955 the author collected a male near Alamos, Sonora, Mexico. Dr. Ross found upon comparison of these two specimens that the apex of the aedeagus of the type was lost, and urged that this structure be described.

Aedeagus (Fig. 5): Apex with 2 sharp spines. Ventral process with a central, slightly sclerotized, tongue-like strap and two lateral recurved hooks. Internally with 2 basal spines (possibly eversible), and ring-like central structure bearing a long projection from the ventral side which lies in a slightly sclerotized tube (this whole apparatus can probably be extended out the apex). Membranous surfaces covered with small spicules.

P U B L I C A T I O N A N N O U N C E M E N T

The Proceedings of the Tenth International Congress of Entomology, held in Montreal, Canada, in August, 1956, are expected to be ready for distribution in late 1958. They will contain nearly 700 scientific contributions, many accompanied by illustrations. The four volumes, comprising over 4200 pages, will constitute an indispensable work of reference for many years since most of the material is not being published elsewhere. For further information write to: Tenth International Congress of Entomology, Science Service Building, Ottawa, Canada.